

[Br. J. Cancer, 62, Suppl. X, 6, (1990)]

Purification and Characterization of the Placental-like Alkaline Phosphatase from Ovarian Epithelial Tumours

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The placental alkaline phosphatase was purified by immunoaffinity chromatography from ovarian epithelial tumours to homogeneity. Up to 40% of the catalytical phosphatase activity in these tumors was derived from this placental type alkaline phosphatase (PLAP). The purified enzyme had a subunit molecular mass of 63,500. Several catalytic and immunochemical properties of the enzyme were similar to those of PLAP, whereas the PLAP-like isozyme was more heat-stable and resistant to 8M urea than PLAP. The amino acid sequence of the PLAP-like enzyme demonstrated heterogeneity at position three in the N-terminal end compared with PLAP.

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Expression of a Hybrid Form of Alkaline Phosphatase Isoenzyme in a Newly Established Cell Line (HuG-1) from a Gastric Cancer Patient.

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An unusual alkaline phosphatase (AP), named HuG-AP, was found in a newly established cell line (HuG-1) derived from a patient with stomach cancer. The enzyme was purified about 300-fold by affinity chromatography. On polyacrylamide gradient (4-30%) gel electrophoresis, the one band with the enzyme activity was observed. The enzymic properties of HuG-AP did not conform to those of liver, intestinal, placenta, and germ cell AP isozymes which were recognized as homodimeric structure. Dot blot analysis showed that both intestinal and placental AP mRNAs were expressed in HuG-1 cell concurrently.

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Serum and Tissue Levels of Placental Alkaline Phosphatase in Patients with Testicular Tumor.

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Placental alkaline phosphatase (PLAP) levels in sera and tissues from 40 patients with testicular tumor were measured using a monoclonal immunocatalytic assay. The mean value of the PLAP levels of seminoma tissues was found to be 92-fold higher than that of normal testes, being significantly high compared with that of nonseminoma tissues. The mean value of the serum PLAP levels from patient's with seminoma was also significantly higher than that from patients with nonseminoma. We conclude that PLAP seems to be a useful tumor marker for the diagnosis and the monitoring of response to treatment in patients with seminoma.